Diamond Digital

DIAMOND DIGITAL
DX-D193P

Colour TFT LCD Monitor

19" (43 cm) LCD Panel Size

Copyright 2008, Mitsubishi Electric Australia Pty. Ltd. All rights reserved.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without the prior written permission.

CONTENTS

1	**Safety**	3
1.1	Disclaimer	3
1.2	Important Safety Instructions	3
		4
2	**Introduction**	
2.1	Before Installing Your Monitor	4
2.2	Unpacking	4
2.3	Precautions	4
3	**Exploded View**	5
3.1	Front Panel Configuration	5
3.2	Bottom Panel Configuration	6
3.3	Side Panel Configuration	7
3.4	Tilt / Swivel Angle	8
3.5	Dimension	8
4	**Production Description**	9
4.1	Supported Timing Table	9
5	**Installing the Monitor**	10
5.1	Ventilation	10
5.2	Desktop Installation	10
5.3	Connecting the Composite Video to the Monitor	10
5.4	Connecting the Y/C(S-Video) Signal to the Monitor	11
5.5	Connecting the YPbPr Signal to the Monitor	11
5.6	Connecting Audio to the Monitor	11
6	**Navigating the Monitor**	12
6.1	Navigating the Monitor On-Screen Display(OSD)	12
6.2	On-Screen Display Menus	12
6.2.1	VGA/DVI Signal OSD Menu	13
6.2.2	VGA/DVI Signal OSD Function Table	14
6.2.3	Video(Composite/YPbPr/S-Video) Signal OSD Menu	15
6.2.4	Video(Composite/YPbPr/S-Video) Signal OSD Function Table	16
6.2.5	Input Signal Icon	17
6.2.6	Hot Key Icon	17
7	**Troubleshooting Guide**	18
8	**Technical Specifications**	19
	WARRANTY	20
	Service Contacts	21

1 Safety

1.1 Disclaimer

This company makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties, merchantability or fitness for any particular purpose. Further, this company reserves the right to revise this publication and to make changes from time to time in the contents hereof without obligation of this company to notify an person of such revision or changes. All brand or product names are trademarks or registered trademarks of their respective companies.

1.2 Important Safety Instructions

1. Read & keep these instructions these instructions.
2. Heed all warnings.
3. Follow all instructions.
4. Do not use this apparatus near water.
5. Clean only with dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
9. Only use attachments/accessories specified by the manufacturer.
10. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

12. Unplug this apparatus during lightning storms or when unused for a long period of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. WARNING : To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
15. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

SYMBOL	SYMBOL DEFINITION
SA 1965	DANGEROUS VOLTAGE: The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.
SA 1966	INSTRUCTIONS: The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

2 Introduction

2.1 Before Installing Your Monitor

Thank you for choosing our new generation DX-D193P monitor. This lightweight, slim design LCD monitor includes many outstanding features and combines the benefit of a high resolution display. Please follow ALL instructions and cautions carefully before using this product. Keep this user manual safely stored for future reference.

- Read this manual cover to cover.
- Pay attention to all warnings and cautions.
- Do not attempt to service the monitor by yourself. If a problem occurs, contact the manufacturer's authorised service center.

2.2 Unpacking

The original packing carton is the safest container in which to transport the unit and must be used if returning the unit for service. Save it for possible future use.
Open the shipping carton and check the contents. If any items are missing or damaged, contact your dealer immediately.

The package should include the following items:

Quantity	Part List
1	DX-D193P TFT LCD Security Monitor with Protective Glass
1	User manual
1	VGA to VGA (D-SUB) cable, 1.36M
1	Power Adapter :12VDC, 4A, 100 – 240VAC, 50/60 Hz
1	AC Power Cord, 1.2M, plug type optional

2.3 Precautions

HANDLING

- The monitor must be treated with caution and not be exposed to impact and shock.
- The monitor has a fragile glass screen. Never rub it with a hard, stiff object or tool as the panel is easily scratched. Your monitor is protected by one glass filter.
- Every effort has been made to protect the screen, however the monitor is a fragile product.

Cleaning & Maintenance

- The display area is highly prone to scratching. Do not use ketone type material (ex. Acetone), ethyl alcohol, toluene, ethyl acid or methyl chloride to clean the screen, as it may permanently damage the screen. Usable cleaning agents are water, IPA (Iso Prophyl Alcohol) or Hexane.
- Keep food particles and fingerprints away from the display area..
- Do not spray any liquid directly on the screen. Wet a clean, soft, lint-free cloth with water only (Paper towels or dirty cloths may scratch the surface of the display).
- Wipe the display softly from top to bottom in a downward motion with another clean, dry, lint-free cloth. Do not to press too hard to avoid damaging the screen.

Storage

- Do not store the monitor in temperatures higher than 60℃ (140℉) or humidity higher than 85%.
- Store in a dark place, keep away from sunlight and ultra violet (UV) radiation.
- Air bubbles may develop within the glass screen if this is not observed.

3 Exploded View

3.1 Front Panel Configuration

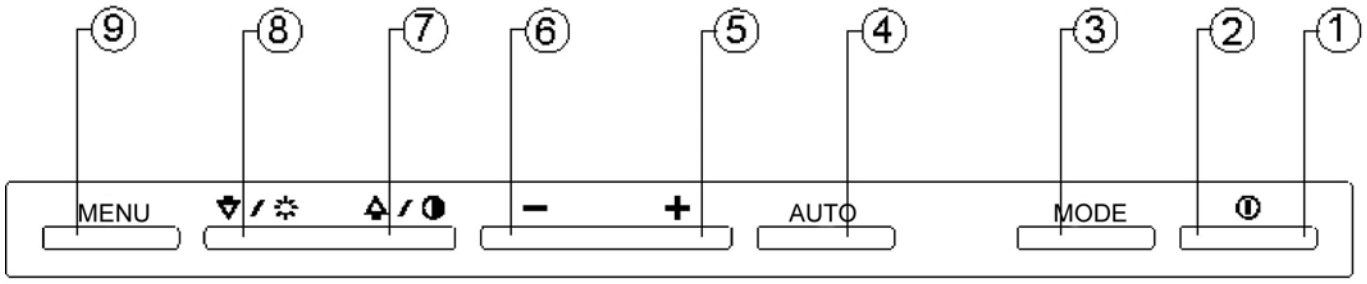


Figure 3.1 Front Panel function description of DX-D193P

Ref #	Button	Function Description	
1	POWER	Press to switch monitor on / off.	
2	LED Indicator	Green: Power on ; Orange: No signal ; Red: Power saving ; NA: Power off	
3	**MODE**	Input source	see ※ **Note**
4	**AUTO**	VGA signal auto adjustment.	
5	+	Press to increase the value of OSD option selected and increase volume.	
6	–	Press to decrease the value of OSD option selected and decrease volume	
7	/	Select OSD options upwards or adjust contrast	
8	/	Select OSD options downwards or adjust brightness.	
9	**MENU**	Menu or close OSD display, enter or return to selection.	

※ Note:

On the first press, the monitor shows the OSD of the current source. Before the OSD disappears, press again to change Mode.

3.2 Bottom Panel Configuration

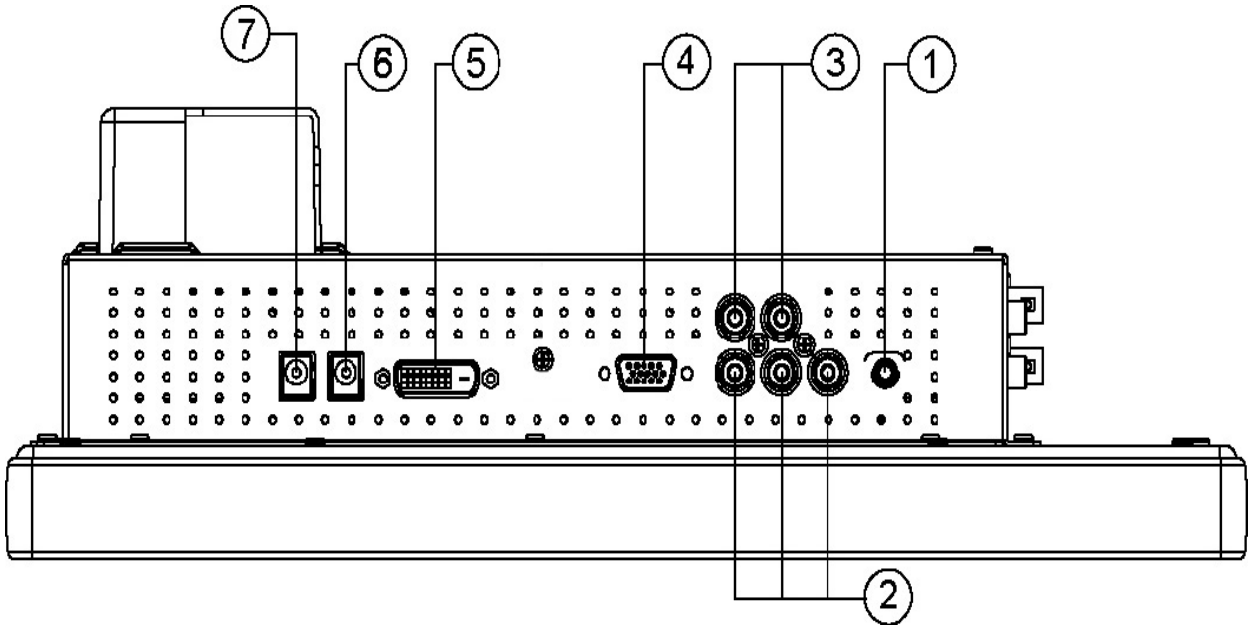


Figure 3.2 Bottom Panel function description of DX-D193P

Input /Output Interface		
Ref #	**Connector**	**Description**
1	PC Audio In	For audio source of R.G.B input terminal.
2	Component (YPbPr)	Connect to component input, such as the video output of a DVD player.
3	Audio In	Audio source for Component input
4	VGA	Connect to R.G.B input, such as the VGA output terminal of a personal computer.
5	DVI	Connect to DVI input terminal, such as the DVI output terminal of a personal computer.
6	DC Out	12V DC out for single camera power (max. 500mA)
7	DC In	DC Power input of 12V/4A.

3.3 Side Panel Configuration

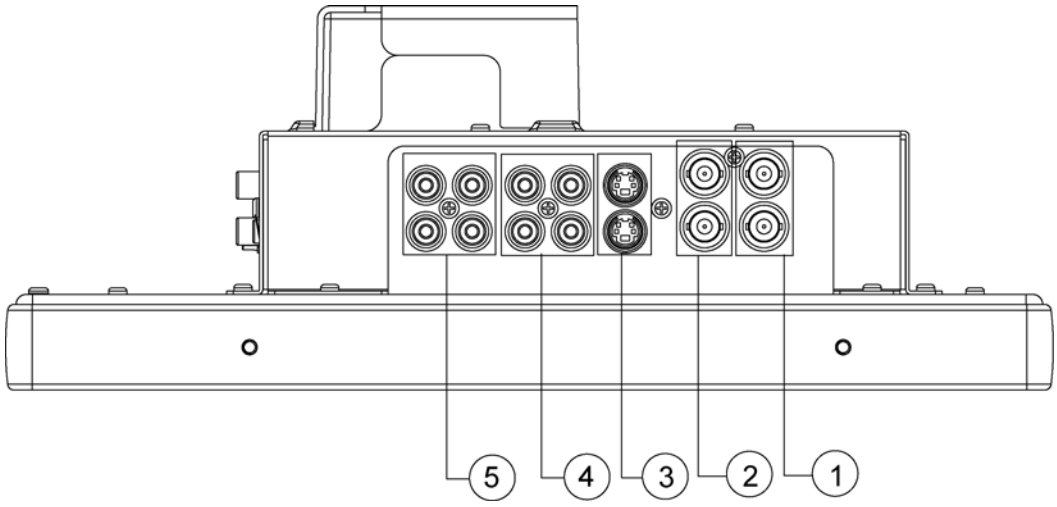
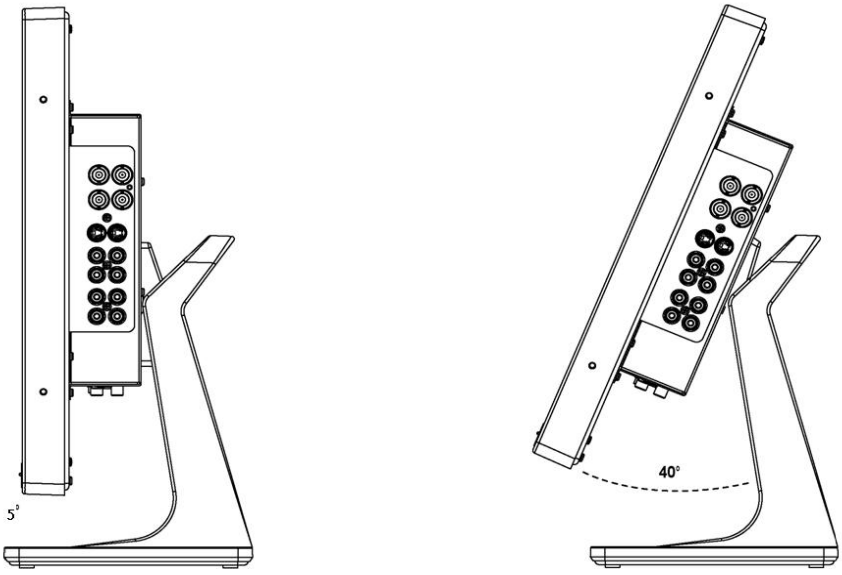


Figure 3.3 Side Panel function description of DX-D193P

Input /Output Interface		
Ref #	**Connector**	**Description**
1	BNC2 In/Out	Connect to the output / input terminal of video equipment, such as a VCR or a color video camera
2	BNC1 In/Out	Connect to the output / input terminal of video equipment, such as a VCR or a color video camera
3	S-Video (Y/C) In /Out	Connect to the Y/C output / input terminal of VCR or other video equipment
4	Audio2 In/Out	RCA Audio input / output terminal, audio 1 for video 1, audio for video 2 & s-video.
5	Audio1 In/Out	RCA Audio input / output terminal, audio 1 for video 1, audio for video 2 & s-video.

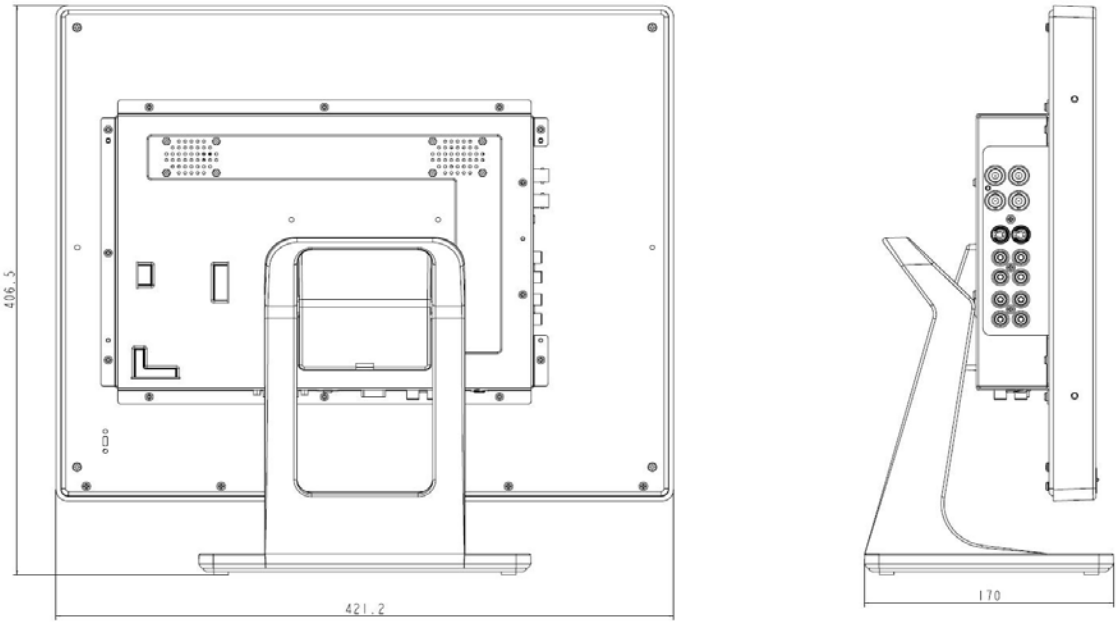
3.4 Tilt / Swivel Angle

The viewing angle of the monitor can be adjusted to the most comfortable monitoring status.



Min Degree	Max Degree
5 degree	40 degree

3.5 Dimension



4 Product Description

The DX-D193P TFT-LCD Security Monitor with Protective Glass displays PAL colour pictures in CCTV systems. There are 2 sets of Composite Video BNC connector inputs/outputs, 2 sets of RCA audio input/outputs, 1 set of L/R RCA Audio inputs for Component (YPbPr) and 1 S-Video (Y/C) input and output using a 4-pin mini-DIN.
Each model includes an Analog VGA input using 15-pin D-sub to accommodate the increasing use of PCs and digital video devices in security applications. DVI and Component Video (YPbPr) connectors are also available.

Monitor control functions are accessed via the front panel push buttons and On-screen Display (OSD). Refer to *Section 3 Exploded View*, page 6, for front panel descriptions.

4.1 Supported Timing Table

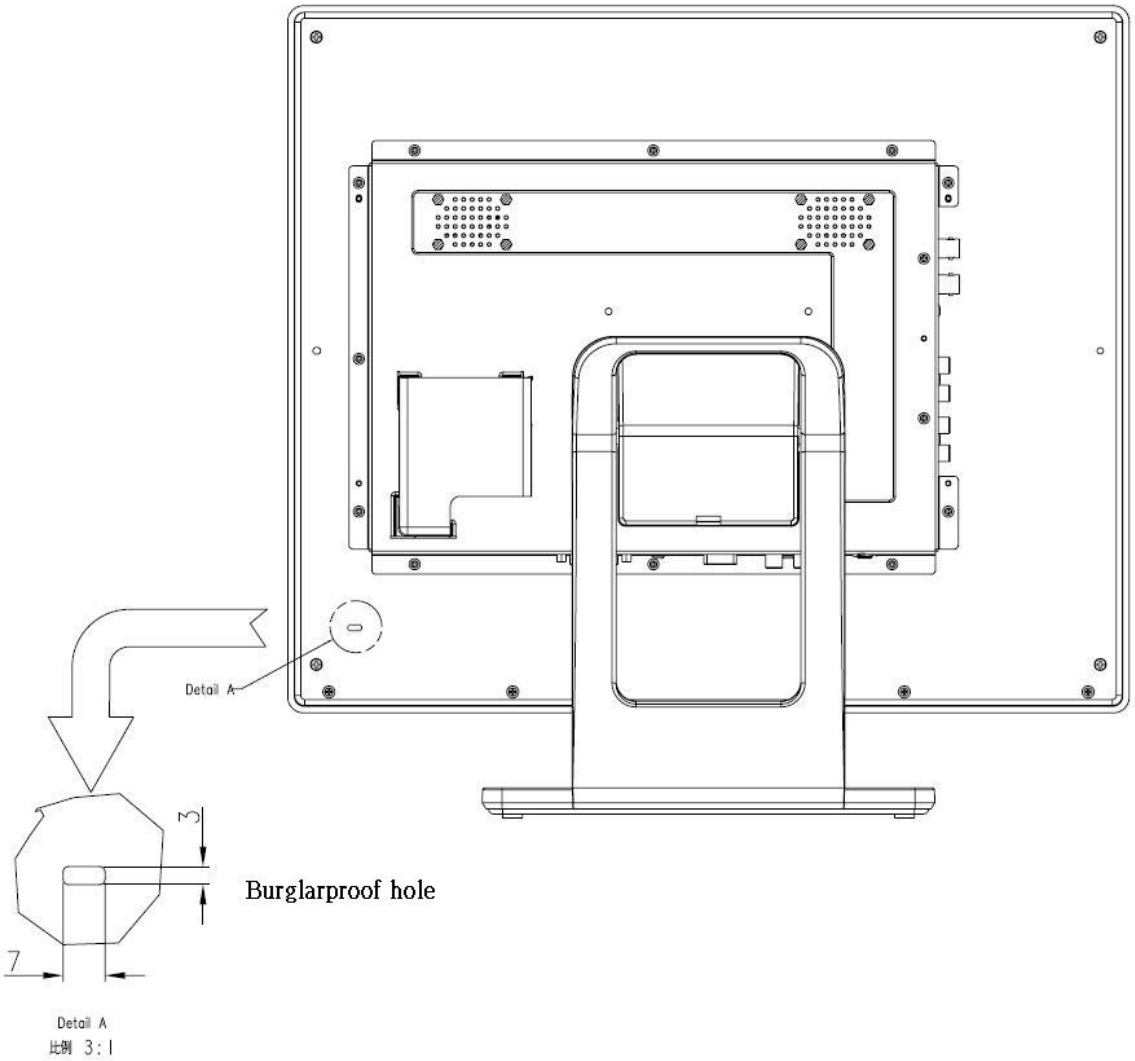
Timing Mode	Standard Type	Pixel Format	Refresh Rate	Pixel Freq.	FH KHz	FV Hz	Interlace	H Pol.	V Pol.
Mode 1	VESA	640x350	85	31.5	37.861	85.08	NO	+	-
Mode 2	Us Text	720x400	70	28.322	31.469	70.087	NO	-	+
Mode 3	VESA	640x400	85	31.5	37.861	85.08	NO	-	+
Mode 4	VESA	720x400	85	35.5	37.927	85.039	NO	-	+
Mode 5	VESA	640x480	60	25.175	31.469	59.94	NO	-	-
Mode 6	VESA	640x480	72	31.5	37.861	72.809	NO	-	-
Mode 7	VESA	640x480	75	31.5	37.5	75	NO	-	-
Mode 8	VESA	640x480	85	36	43.269	85.008	NO	-	-
Mode 9	VESA	800x600	56	36	35.156	56.25	NO	+	+
Mode 10	VESA	800x600	60	40	37.879	60.317	NO	+	+
Mode 11	VESA	800x600	72	50	48.077	72.188	NO	+	+
Mode 12	VESA	800x600	75	49.5	46.875	75	NO	+	+
Mode 13	VESA	800x600	85	56.25	53.674	85.061	NO	+	+
Mode 14	VESA	1024x768	60	65	48.363	60.004	NO	-	-
Mode 15	COMPAQ	1024×768	66	71.664	53.964	66.132	NO	+	+
Mode 16	VESA	1024x768	70	75	56.476	70.069	NO	-	-
Mode 17	VESA	1024x768	75	78.75	60.023	75.029	NO	+	+
Mode 18	VESA	1024x768	85	94.5	68.677	84.997	NO	+	+
Mode 19	NEC	1280x1024	60	108	63.981	60.02	NO	+	+
Mode 20	HITA	1280x1024	72	135	78.125	72.005	NO	+	+
Mode 21	VESA	1280x1024	75	135	79.976	75.025	NO	+	+
Mode 22	VESA	1280x1024	85	157.5	91.146	85.024	NO	+	+

5 Monitor Installation

This chapter outlines the procedures to install the DX-D193P TFT-LCD Security Monitor with Protective Glass. A qualified service person should install the monitor and adhere to all local codes.

5.1 Ventilation

To prevent overheating, ensure that the ventilation openings on the rear of the monitor are not covered.



5.2 Desktop Installation

The DX-D193P TFT-LCD Security Monitor comes with a 12V/4A power adapter. Before connecting the power cord cable to the adapter, put the adapter in the holder fixed on the rear of the monitor (see Figure) .The monitor automatically adjusts to either power input voltage. The viewing angle of the LCD can be adjusted for the most comfortable monitoring status.

5.3 Connecting the Composite Video Signal to the Monitor

The DX-D193P TFT-LCD Security Monitor with has 2 sets of BNC connectors located on the rear side of the monitor for composite video input/outputs. All video inputs are passive loop-through when operating in a single connection mode. If a cable is also connected to the output connector, the video signal can be passed on to another monitor connected to it via the passive loop-through function.

Note: Press the SOURCE button (see Figure 3.1) to select the video source (Composite1/2)

5.4 Connecting the Y/C (S-Video) Signal to the Monitor

There is 1 set of mini-DIN type connectors for the S-Video (Y/C) input/output on the rear side panel (see Figure 3.3).

5.5 Connecting the YPbPr Signal to the Monitor

There is 1 set of YPbPr connectors for the S-Video (Y/C) input/output on the rear side panel
Connect the signal cable to the connectors with same colors (green/blue/red)

5.6 Connecting Audio to the Monitor

There are 3 sets of stereo audio connectors and 1 stereo mini-jack for audio input located on the rear side panel (see Figure 3.2 or 3.3).

- Audio 1 & Audio 2 are RCA input/output sets with looping through function. Audio 3 is RCA inputs with L/R channel.
- Audio 1 is associated with Video 1; Audio 2 is associated with Video 2 (Y/C); Audio 3 is associated with YPbPr; PC audio is associated with VGA,DVI.

Ref	Audio 1	Audio 2	Audio 3	PC Audio
Video 1	V			
Video 2		V		
S-video	V			
YPbPr			V	
VGA				V
DVI				V

6 Navigating the Monitor

6.1 Navigating the Monitor On-screen Display(OSD)

The DX-D193P TFT-LCD Security Monitor has several modes: Composite1/2, YPbPr, VGA, DVI and S-Video.

The LCD monitor is programmed through the on-screen display (OSD) menus and submenus where an operator can select operating parameters. To access the OSD menus, press the Menu button on the front panel. Use the front panel of the monitor to make any necessary adjustments to the OSD.

NOTE: When you are navigating through the OSD menus, use the MENU button to select a menu or exit a menu.

To navigate the set up menus, follow the steps below:

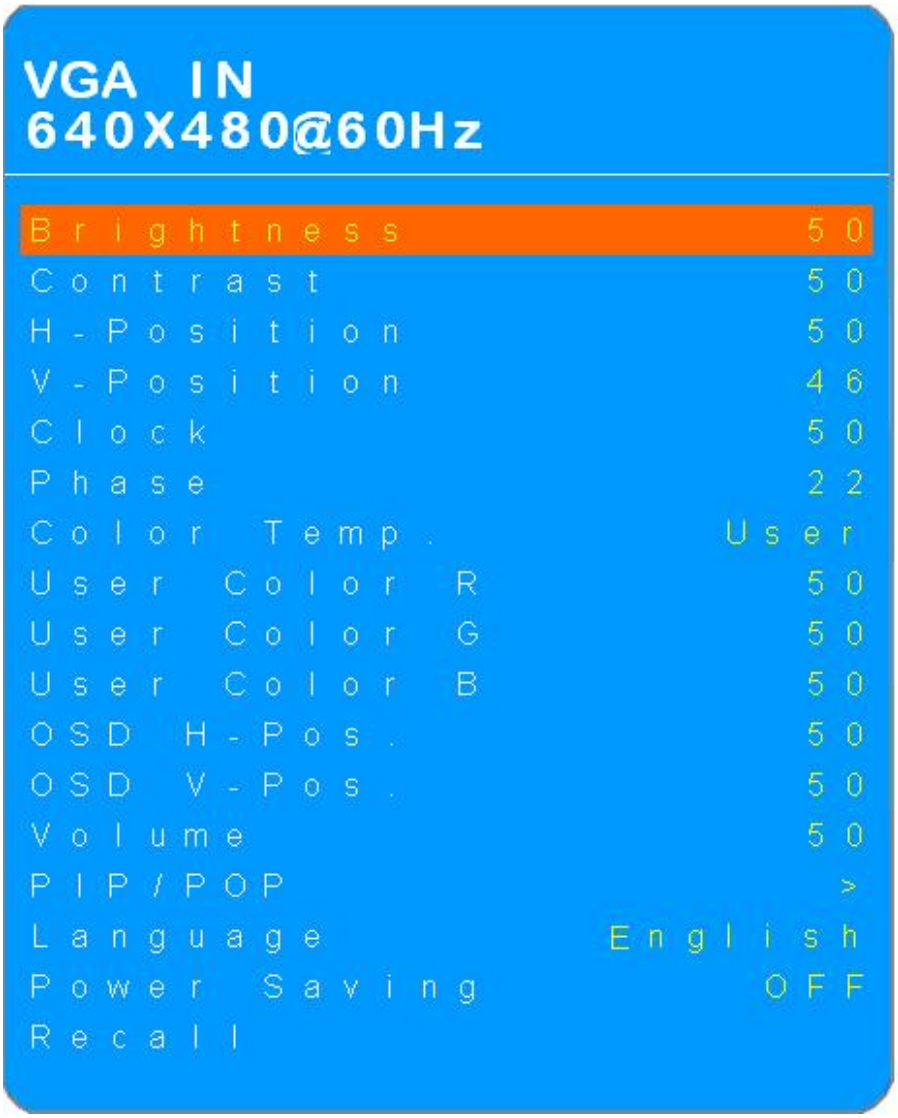
1. Connect the CVBS or VGA cable.
2. Press the POWER button to turn on the unit (see *Figure 3.1*).
3. If required, press the SOURCE button until a signal is displayed. **NOTE: Main menus are not available without a signal applied.**
4. Press the MENU button to activate the main menu selections (see *Figure 3.1*).
5. Press the ▲ / ◑ and ▼ / ☼ buttons to select a menu.
6. Press the + and − buttons to toggle the OSD values directly.
7. Press the MENU button to exit the OSD menu bar.

6.2 On-screen Display Menus

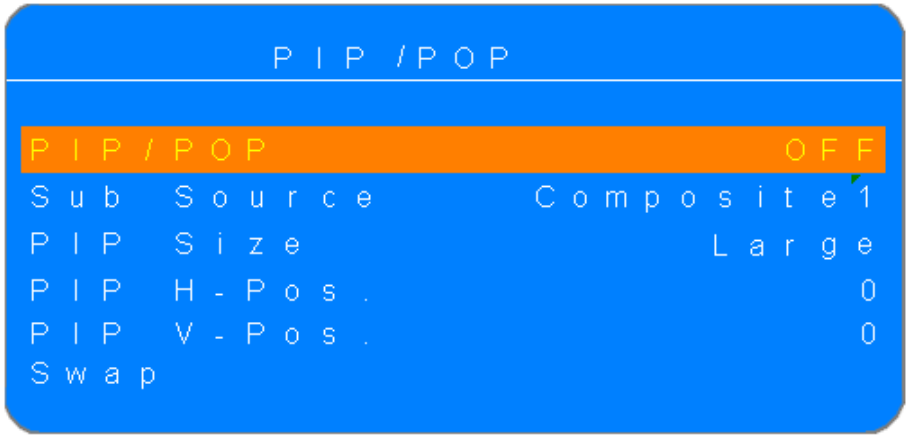
There are on-screen menus that allow you to customize your settings. Press the **MENU** button to access the OSD menu.

6.2.1 VGA/DVI Signal OSD Menu

◆



◆ **Sub Menu _ PIP/POP**



*** Above Value/data is for reference only. Change without notice.**

6.2.2 VGA/DVI Signal OSD Function Table

◆ **Main Menu**

REF.#	Menu	Definition
1	Brightness	Adjusts the brightness level (range 0-100)
2	Contrast	Adjusts the contrast level (range 0-100)
3	H-Position *	Adjust the left or right position of the screen image (range 0-100)
4	V-Position *	Adjust the up or down position of the screen image (range 0-100)
5	Clock *	Adjust the horizontal sync width of the screen image (range 0-100)
6	Phase *	Adjust the clarity of the screen image(range 0-100)
7	Color Temp.	Press (+) or (-) to choose three types of colour temperature 9300°K , 6500°K or User Color.
8	User Color R	Adjust the red colour's intensity of the screen image (range 0-100)
9	User Color G	Adjust the green colour's intensity of the screen image (range 0-100)
10	User Color B	Adjust the blue colour's intensity of the screen image (range 0-100)
11	OSD H-Pos.	Adjust the left or right position of the OSD.(range 0-100)
12	OSD V-Pos.	Adjust the up or down position of the OSD.(range 0-100)
13	Volume	Adjust the volume control.
14	PIP/POP	Enter PIP/POP submenu.
15	Language	Select languages: English, Traditional Chinese, Simplified Chinese, French, German, Spanish, Italian, Portuguese, Russian and Japanese.
16	Power Saving	Power saving mode selection
17	Recall	Press (+) or (-) recall the default value

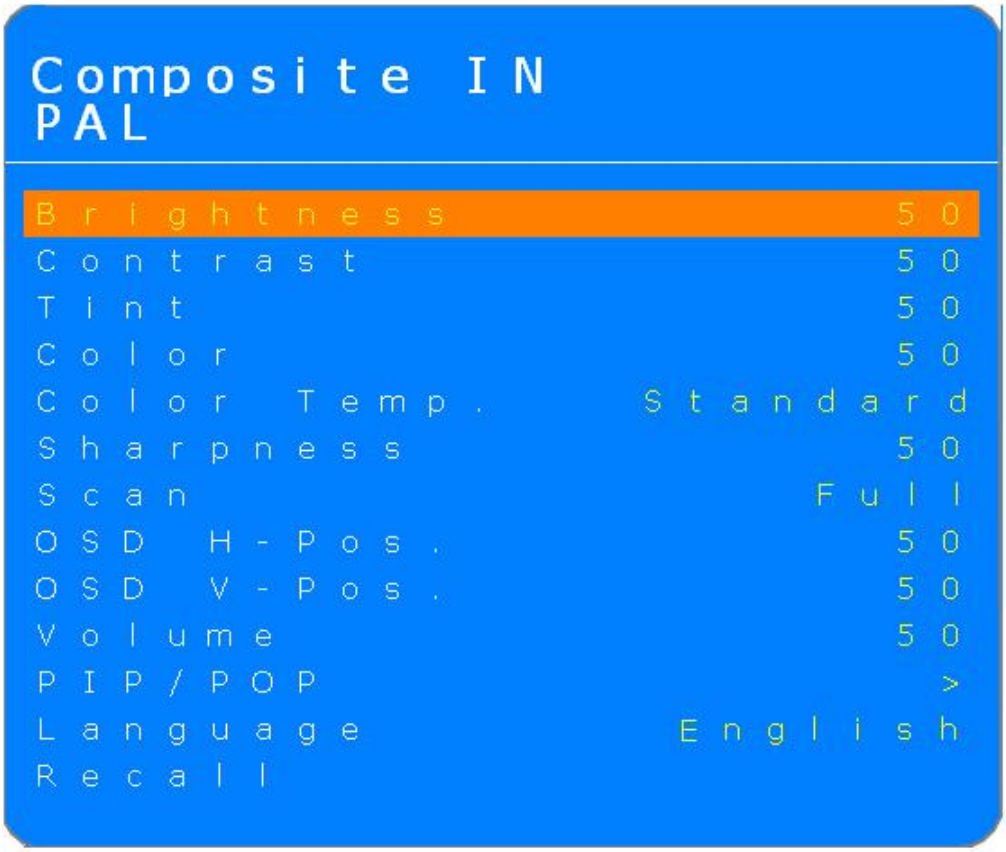
◆ **Sub Manu**

REF.#	Sub Menu	Definition
14.1	PIP/POP	View the video input screen image on the left-top/right side screen.
14.2	Sub Source	Choose the source of the sub picture: Composite1/2 or S-Video
14.3	PIP Size	Choose the size of the sub picture
14.4	PIP H-Position	Adjust the left or right position of the sub picture
14.5	PIP V-Position	Adjust the up or down position of the sub picture
14.6	Swap	Switch between main source and sub source

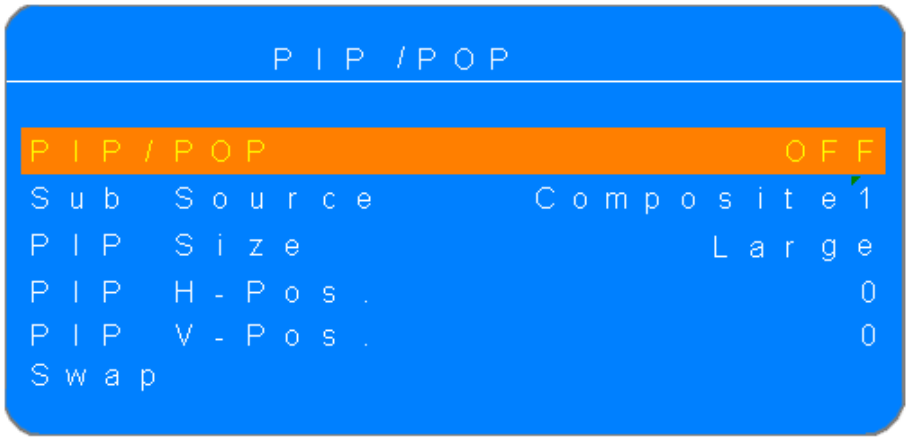
*** Item 3,4,5,6 have different value after auto tuning, but DVI can't adjust.**

6.2.3 Video(Composite/YPbPr/S-Video) Signal OSD Menu

◆ **Main Menu**



◆ **Sub Menu**



***Above value/data is for reference only. Change without notice.**

6.2.4 Video(Composite/YPbPr/S-Video) Signal OSD Function Table

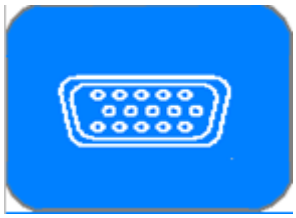
◆ **Main Menu**

REF.#	Submenu	Definition
1	Brightness	Adjusts the brightness level (range 0-100)
2	Contrast	Adjusts the contrast level (range 0-100)
3	Tint	Adjust the colour tint. (NTSC only) (range 0-100)
4	Color	Adjust the colour density (range 0-100)
5	Color Temp.	Press (+) or (-) to choose three types of colour temperature 9300°K , 6500°K or User Colour.
6	Sharpness.	Adjust the clarity and focus of the screen image (range 0 - 100)
7	Scan	Press (+) or (-) to choose 4 type of over/ under/ full/ 1 : 1 scan
8	OSD H-Pos.	Adjust the left or right position of the OSD.(range 0-100)
9	OSD V-Pos.	Adjust the up or down position of the OSD.(range 0-100)
10	Volume	Adjust the volume control.
11	PIP/POP	Entering PIP/POP submenu.
12	Language	Select languages: English, Traditional Chinese, Simplified Chinese, French, German, Spanish, Italian, Portuguese, Russian and Japanese.
13	Recall	Press (+) or (-) recall the default value

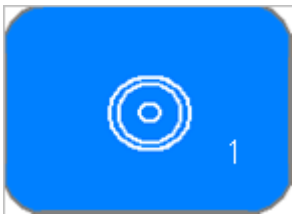
◆ **Sub Manu**

REF.#	Submenu	Definition
11.1	PIP/POP	View the video input screen image on the left-top/right side screen
11.2	Sub Source	Choose the source of the sub picture: VGA,DVI or YPbPr.
11.3	Size	Choose the size of the sub picture
11.4	PIP H-Position	Adjust the up or down position of the sub picture
11.5	PIP V-Position	Adjust the left or right position of the sub picture
11.6	Swap	Switch between main source and sub source

6.2.5 Input Signal Icon

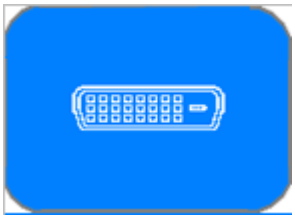


VGA Signal

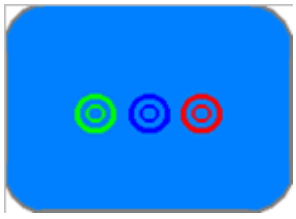


Composite Signal

Video Signal



DVI Signal



YPbPr Signal

6.2.6 Hot Key Icon

Contrast Adjustment

Brightness Adjustment

Volume Adjustment

7 Troubleshooting Guide

Problem	**Solution**
No image is displayed on screen	– Check that the power cord of the monitor is securely connected to the wall outlet or grounded extension cable or strip. – Power switch should be in the ON position and the LED illuminated.
"No Signal" message is displayed	– The signal cable should be completely connected to the video card/computer. – The video card should be completely seated in its slot and the computer switched ON. – Press the **Mode** button on the front panel to choose an available source.
Display image is not centered, is too small, or too large in the **PC** mode	– Push the Auto key on the front panel to activate the Auto Adjust function. -or- – Adjust the Clock and Phase in the PC OSD submenu.
Vertical or horizontal noise is present in the picture	– Push the down key to activate the AUTO function (for VGA inputs only). -or- – Adjust the Clock and Phase in the PC OSD menu.
Incorrect colours	– Press the **MENU** button on the front panel of the monitor, then press the down arrow to select the **Color Temp** in OSD. Press the down arrow on the front panel and select 9300°K , 6500°K or User Color - or - – Press the **MENU** button on the front panel of the monitor, then press the right arrow to select the **Recall** menu. Press the down arrow on the front panel and select Recall to reset to the default settings.
The error message "Out of Range" is displayed	– PC is operating outside of the specified timing table recommendation. When it is not supported by the monitor, change the PC timing mode to one of the valid timing modes (See Table 4.1).

8 Technical Specification

Model		DX-D193P
Monitor Size		19 inch with protective screen
Pixel pitch (H x V mm)		0.294 x 0.294
Max. Resolution	VGA / DVI	1280 x 1024 pixels /85 Hz
Dimension (W x H x D mm)		421.2 x 408.8 x 240
Display Mode		VGA、DVI、Composite、S-VIDEO、Component.
Signal Connector		DC In/Out, VGA In, DVI In, BNC1 In/Out, BNC2 In/Out, Y/C In/Out, YPbPr In, Audio1 In, Audio2 In, Audio3 In, PC Audio In
Power Input		DC Input : 12V / 4A.
Rated Voltage		100/240 VAC, 50/60 Hz
Power Output		DC 12V / 500mA.
Operating Condition		Temp. : 0°C ~ 40°C, Humidity : 20% ~ 80%.
Storage Condition		Temp. : -20°C ~ 60°C, Humidity : 15% ~ 85%.
Power Consumption (On/Off)		<45W/5W
Weight	N.W.	6.98kgs.
	G.W.	8.8kgs.
LCD Panel Optical Characteristics		
Luminance		250 cd/m^2
Contrast Ratio (CR)		1000 : 1
Response Time(Tr +Tf)		5 ms
Viewing Angel (H/V)		160°/160°
Video Input		
Composite Video (CVBS) 1.0 Vp-p (0.5–1.5 Vp-p), automatic switching from 75Ω unbalanced termination to Hi-Z with passive loop-through operation		
Y/C (S-video) 0.7 Vp-p (Y-signal), 0.3 Vp-p (C-signal) 75Ω termination		

WARRANTY

After Sales Service

After this product is unpacked, keep the carton and packing materials to ensure safe transportation in case of any after sales service.

The warranty is covered by a 3-year limited warranty, subject to normal conditions of use. If you experience any problems with this product please contact your local dealer or supplier for repair and maintenance instructions.

Warranty Do NOT Include:

☐ Any damage resulting from incorrect use or careless operation or handling of the equipment.

☐ Any damage caused by not operating the equipment in accordance with the manufacturer's instructions detailed in the "User Manual ".

☐ Any tampering or removal of the Monitor housing will invalidate the warranty.

☐ Damages resulting from natural disasters e.g. flood, fire and earthquake.

☐ Any damages caused by inappropriate transportation or storage of the equipment.

Service Contacts

Australian Service Contacts

Visit the Customer Support page of Mitsubishi Electric Australia's web site at;

www.mitsubishielectric.com.au

Further details of your nearest Mitsubishi Electric Authorized Service Center or to contact a Mitsubishi Electric Service Representative in your state or territory:

New South Wales and Australian Capital Territory
348 Victoria Road
Rydalmere, NSW, 2116
Telephone: (02) 1300 651-808
Fax: (02) 9684-7684

Queensland
12 / 468 Nudgee Road
Hendra, QLD, 4011
(Airlink Business Park)
Telephone: (07) 3623-2000
Fax: (07) 3630-1888

South Australia and Northern Territory
77 Port Road
Hindmarsh, SA, 5007
Telephone: (08) 8340-0444
Fax: (08) 8340-0555

Victoria and Tasmania
Building 28
Omnico Business Park
270 Ferntree Gully Rd
Notting Hill, VIC, 3168
Telephone: (03) 9535-7800
Fax: (03) 9535 7801

Western Australia
5 / 329 Collier Road
Bassendean, WA, 6054
Telephone: (08) 9377-3411
Fax: (08) 9377-3499